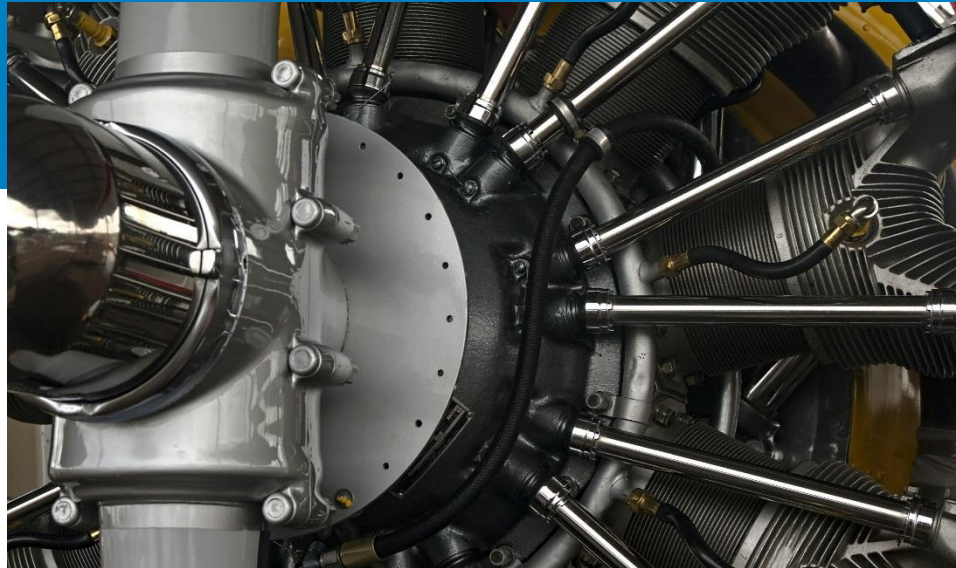


Environmental research — engine emissions (SAMPLEIV)



Contractor

INTA

Consortium Members

Rolls Royce,

The University of Manchester,

Cardiff University,

Zurich University of Applied Sciences (ZHAW),

Universidad Politecnica de Madrid (UPM)

Contract period

23/09/2020 - 15/03/2025

Budget

900 000 €

Scan the QR code or click [here](#)
to visit the webpage of this project



Main objectives

The objective of this framework contract is to improve the ICAO Annex 16 Volume II engine emissions sampling and measurement requirements for nvPM mass and number and to propose more robust practices.

The work aims at:

- analysing the relative share of aircraft fitted with engines not regulated for nvPM in operations and emissions at individual European airports;
- proposing and testing new or novel sampling designs and measurement techniques taking into account the state of the art;
- measuring gaseous emissions (e.g., NO_x, HC, CO, CO₂), smoke emissions, nvPM mass and number emissions, nvPM particle size for both regulated and non-regulated engines (e.g., small turbofan engines with a rated thrust below 26.7 kN, turboprop, turboshaft).

As output of this research and test programme, the contractor shall recommend modifications or new add-ons to the existing standards. The proposed changes shall be backed by an appropriate scientific and technical rationale that substantiates their underlying scientific reasoning and their practicability for field deployment.

The framework contract will be implemented through two specific contracts.

Impacts & benefits

The expected research results will be used for the assessment of engine emissions, in particular for non-volatile particulate matter (nvPM), mass and number determination including particle size measurement and sampling techniques.

The results will support the work carried out within the ICAO Committee on Aviation Environmental Protection (CAEP) and the Society of Aerospace Engineers International (SAE) Committee E-31 (Aircraft Engine Gas and Particulate Emissions Measurement Committee).

